IL34:CSF1 binds CSF1R

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Introduction

Reactome is open-source, open access, manually curated and peer-reviewed pathway database. Pathway annotations are authored by expert biologists, in collaboration with Reactome editorial staff and cross-referenced to many bioinformatics databases. A system of evidence tracking ensures that all assertions are backed up by the primary literature. Reactome is used by clinicians, geneticists, genomics researchers, and molecular biologists to interpret the results of high-throughput experimental studies, by bioinformaticians seeking to develop novel algorithms for mining knowledge from genomic studies, and by systems biologists building predictive models of normal and disease variant pathways.

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Literature references

Fabregat, A., Sidiropoulos, K., Viteri, G., Forner, O., Marin-Garcia, P., Arnau, V. et al. (2017). Reactome pathway analysis: a high-performance in-memory approach. *BMC bioinformatics, 18*, 142. ↗

Sidiropoulos, K., Viteri, G., Sevilla, C., Jupe, S., Webber, M., Orlic-Milacic, M. et al. (2017). Reactome enhanced pathway visualization. *Bioinformatics, 33*, 3461-3467. ↗

Fabregat, A., Jupe, S., Matthews, L., Sidiropoulos, K., Gillespie, M., Garapati, P. et al. (2018). The Reactome Pathway Knowledgebase. *Nucleic Acids Res, 46*, D649-D655. ↗

Fabregat, A., Korninger, F., Viteri, G., Sidiropoulos, K., Marin-Garcia, P., Ping, P. et al. (2018). Reactome graph database: Efficient access to complex pathway data. *PLoS computational biology, 14*, e1005968. ↗

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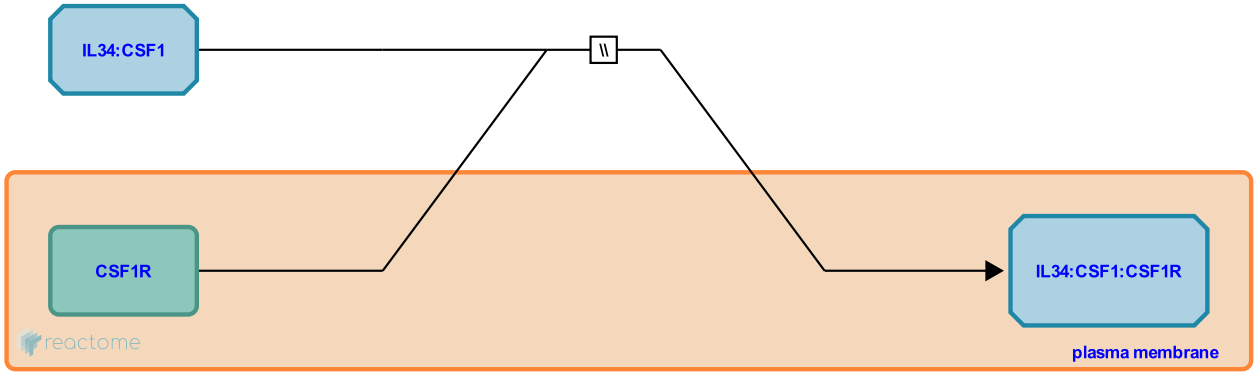
Stable identifier: R-HSA-9009485

Type: omitted

Compartments: extracellular region, plasma membrane



Interleukin-34 (IL34) can bind Macrophage colony-stimulating factor 1 (CSF1). The IL34:CSF1 heteromer may bind Macrophage colony-stimulating factor 1 receptor (CSF1R) facilitating receptor maturation and cellular trafficking. Consequently, downstream signaling pathways are activated (Segaliny et al. 2015). Ultimately, these events lead to the release of pro-inflammatory chemokines regulating the innate immunity and inflammation. The exact binding mechanism of IL34:CSF1 to CSF1R is unclear. Hence, this interaction is represented as a black box event.

Literature references

Ségaliny, AI., Brion, R., Brulin, B., Maillasson, M., Charrier, C., Téletchéa, S. et al. (2015). IL-34 and M-CSF form a novel heteromeric cytokine and regulate the M-CSF receptor activation and localization. *Cytokine, 76*, 170-81. ↗

Editions

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